UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,805	12/08/2003	Christoph Bussler	021756-002600US	5730

51206   7590   04/03/2008
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ART UNIT	PAPER NUMBER
2165	

MAIL DATE	DELIVERY MODE
04/03/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2007*.

2a)☒ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to communications filed 12/17/2007. Claims 1,

2, 6, 17, 18, 19, and 20 are amended. Claims 1-26 are pending.

Claim Objections

2.   Objections to claims 2, 11, 18, and 20 are withdrawn due to Applicant's

amendment filed 12/17/2007.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

4.   Claims 1, 3, 5, 6, 14, 15, 17, 19, and 25-26 are rejected under 35 U.S.C.

103(a) as being unpatentable over Drake et al. (US Pub. No. 2003/0070142 A1),

hereinafter *Drake*, in view of Rasmussen (USPN 7,185,016 B1), hereinafter

Rasmussen, and further in view of Sang-Kyun et al. ("Immediate and Partial

Validation Mechanism for the Conflict Resolution of Update Operations in XML

Databases." 2002), hereinafter Sang.

5.　　　**Per claim 1**, *Drake* discloses a computer-implemented method of validating data in an object model **(See Title teaches validation of data model object content. Also see paragraph [0024].)**, comprising:

identifying a first subject of validation wherein the first subject is one of an object, an attribute, an association and a collection of objects **(Fig. 3 illustrates identifying a first subject of validation as social security number where the name attribute identifies "social_security_number". Further see paragraphs [0024-0025 and 0029])**;

determining a context of data validation based on the first subject, the context including one of a) the first subject, and b) the first subject and one or more additional subjects **(See Fig. 3 and see paragraphs [0024-0025] wherein designing rules specifically for social security numbers is determining a context of data validation based on the first subject.)**;

determining one or more validation rules for each subject in the context **(See Fig. 3 and paragraphs [0011, 0020, and 0024-0025] where determining rules for the subject in the context is taught.)**; and

applying the determined validation rules to each subject in the context, **(See Figs. 3 and 4, also paragraphs [0011, 0024-0025, and 0031] teaches applying validation rules where partial or complete validation will occur.)**.

Drake does not explicitly disclose the data is metadata in an object model stored in a database. However, *Ramussen* discloses metadata models and that

the metadata is stored in data sources such as databases **(See col. 12 lines 53-55, and col. 2 lines 26-27)**.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art of data object models to allow users of the system of *Ramussen* including a database storing metadata to run the validation application of Drake **(See col. 12 lines 53-55, and col. 2 lines 26-27)**. The motivation would have been to provide multiple users access to the validation application of Drake **(See *Ramussen* col. 3 lines 37-41)**.

Drake, in view of Ramussen, does not explicitly disclose wherein applying the determined validation rules results in one of partially and completely validating the metadata for the object model. However, Sang discloses partial or full, i.e. complete, validation **(See Abstract of page 387 -1st page-, also page 393-394 where partial or complete validation occurs.)**.

Both Drake, in view of Ramussen, and Sang are directed to object validation in the art of database technology. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the cited references because Sang would have provide for performance improvement **as seen in Abstract and pages 393-394 – see "4 Performance Evaluation" through "4.3 Analysis of Performance"**.

6.   **Per claim 3**, *Drake* discloses the method of claim 1, wherein identifying includes receiving an indication from a user interface module, said indication

identifying the first subject **(Fig. 1 illustrates graphical user interface
interaction. See paragraphs [0031])**.

7.   **Per claim 5**, *Drake* discloses the method of claim 1, wherein identifying
includes receiving an update indication identifying the first subject in response to
a modification of the first subject **(See paragraph [0032] teaches update
indication.)**.

8.   **Per claim 6**, *Drake* discloses the method of claim 1, wherein each of the
one or more validation rules is one of a correctness type rule and a
completeness type rule, a correctness validation rule operable to be applied
while partially validating the object model and a completeness validation rule
operable to be applied while completely validating the object model **(See Fig. 3
and paragraphs [0004 and 0025] where validation is for correctness and/or
completeness validation.)**.

9.   **Per claim 14**, *Drake* discloses the method of claim 1, wherein determining
one or more validation rules includes identifying rules in rule files based on the
subject type of each subject to be validated **(See rule file in Fig. 3)**.

10.   **Per claim 15**, *Drake* discloses the method of claim 14, wherein each rule
file is a Java file **(See paragraph [0035] where software packages is
JavaBeans implying Java files)**.

11.   **Per claim 17**, *Drake* discloses a data validation system for validating an

object model, comprising:

means for identifying a first subject of validation, wherein the first subject

type is one of an object, an attribute, an association and a collection of objects

(Fig. 3 illustrates identifying a first subject of validation as social security

number where the name attribute identifies "social_security_number".

Further see paragraphs [0024-0025 and 0029]);

means for determining a context of data validation based on the first

subject, the context including one of a) the first subject, and b) the first subject

and one or more additional subjects **(See Fig. 3 and see paragraphs [0024-**

0025] wherein designing rules specifically for social security numbers is

determining a context of data validation based on the first subject.);

means for determining one or more validation rules for each subject in the

context **(See Fig. 3 and paragraphs [0011, 0020, and 0024-0025] where**

determining rules for the subject in the context is taught.); and

means for applying the determined validation rules to each subject in the

context **(See Figs. 3 and 4, also paragraphs [0011, 0024-0025, and 0031]**

teaches applying validation rules.).

Drake does not explicitly disclose the data is metadata nor a database that

stores the objects and metadata of the object model. However, *Ramussen*

discloses metadata models and that the metadata is stored in data sources such

as databases **(See col. 12 lines 53-55, and col. 2 lines 26-27)**.

At the time of the invention, it would have been obvious to a person of
ordinary skill in the art of data object models to allow users of the system of
Ramussen including a database storing metadata to run the validation
application of Drake **(See col. 12 lines 53-55, and col. 2 lines 26-27)**. The
motivation would have been to provide multiple users access to the validation
application of Drake **(See *Ramussen* col. 3 lines 37-41)**.

Drake, in view of Ramussen, does not explicitly disclose wherein the
means for applying the determined validation rules provides for both partially and
completely validating the metadata for the object model. However, Sang
discloses partial or full, i.e. complete, validation **(See Abstract of page 387 -1st
page-, also page 393-394 where partial or complete validation occurs.)**.

Both Drake, in view of Ramussen, and Sang are directed to object
validation in the art of database technology. Therefore, it would have been
obvious to one of ordinary skill in the art at the time the invention was made to
have combined the cited references because Sang would have provide for
performance improvement **as seen in Abstract and pages 393-394 – see "4
Performance Evaluation" through "4.3 Analysis of Performance"**.

12.   **Per claim 19**, *Drake* discloses a method of validating data in an object
model, the method comprising:

receiving user defined rules, each rule defining a validation rule on a data
object **(See Fig. 4 illustrates and paragraph 0031 teaches custom validation**

is user validation. See paragraphs [0011 and 0020] teaches receiving user

defined rules. See Title and paragraph [0024 teaches validation rule on data

model object content.), each rule being one of a completeness type rule and a

correctness type rule (Fig. 3 illustrates and paragraphs [0005 and 0025]

disclose completeness and correctness type rules.);

storing the validation rules (See Fig. 1 illustrates stored validation rules

in data model.);

identifying a first subject of metadata validation, wherein the first subject

has a subject type selected from the group consisting of is one of an attribute, an

association, an object and a collection of objects (Fig. 3 illustrates identifying a

first subject of validation as social security number where the name

attribute identifies "social_security_number". Further see paragraphs

[0024-0025 and 0028-0029].);

determining a context of validation based on the first subject, wherein the

context includes the first subject and none, one or more additional subjects (See

Fig. 3 and see paragraphs [0024-0025] wherein designing rules specifically

for social security numbers is determining a context of data validation

based on the first subject.); and

applying a correctness type validation rule to each of the first and

additional subjects (See Figs. 3 and 4, also paragraphs [0011, 0024-0025, and

0031] teaches applying validation rules. See Fig. 3 and paragraphs [0004]

where validation is for correctness.); and

applying a correctness type and completeness type validation rule to each

of the determined first and additional subjects **(See Fig. 3 and paragraphs**

[0004 and 0025] where Drake teaches validation for correctness and

completeness.)

Drake does not explicitly disclose the data is metadata nor a database that

stores the objects and metadata of the object model. However, *Ramussen*

discloses metadata models and that the metadata is stored in data sources such

as databases **(See col. 12 lines 53-55, and col. 2 lines 26-27)**.

Drake does not explicitly disclose storing the validation rules to the

database. However, Drake teaches storing validation rules in the data model

(See Fig. 1-2 and paragraph [0019]), while *Ramussen* discloses storing the

data model in a database **(See col. 12 lines 53-55, and col. 2 lines 26-27)**.

At the time of the invention, it would have been obvious to a person of

ordinary skill in the art of data object models to allow users of the system of

Ramussen including a database storing metadata to run the validation

application of Drake **(See col. 12 lines 53-55, and col. 2 lines 26-27)**. The

motivation would have been to provide multiple users access to the validation

application of Drake **(See *Ramussen* col. 3 lines 37-41)**.

Drake, in view of Ramussen, does not explicitly disclose wherein applying

the determined validation rules for correctness when only a portion of the

metadata is determined; and apply for correctness and completeness when all of

the metadata is determined. However, Sang discloses partial or full, i.e.

complete, validation **(See Abstract of page 387 -1st page-, also page 393-394**

where partial or complete validation occurs.).

Both Drake, in view of Ramussen, and Sang are directed to object

validation in the art of database technology. Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to

have combined the cited references because Sang would have provide for

performance improvement **as seen in Abstract and pages 393-394 – see "4**

Performance Evaluation" through "4.3 Analysis of Performance".

13.   **Per claim(s) 25**, rejection of claims 14 and 19 are fully incorporated.

Claim 25 is rejected under the same rationale as claim 14 due to the similarity in

scope in the limitations of the claims. **(See respective claims above.)**.

14.   **Per claim(s) 26**, rejection of claims 15, 19 are fully incorporated. Claim26

is rejected under the same rationale as claim 15 and 19 due to the similarity in

scope in the limitations of the claims. **(See respective claims above.)**.

15.   Claims 2, 4, 18, and 20-21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Drake et al. (US Pub. No. 2003/0070142 A1), hereinafter

Drake, in view of Rasmussen (USPN 7,185,016 B1), hereinafter *Rasmussen*, in

view of Sang-Kyun et al. ("Immediate and Partial Validation Mechanism for the

Conflict Resolution of Update Operations in XML Databases." 2002), hereinafter

Sang, and in further view of Mikhailov et al. (USPN 6,968,500 B2), hereinafter

Mikhailov.

16.   **Per claim 2**, the rejection of claim 1 is incorporated. Furthermore, *Drake*

as modified by *Rasmussen* does not explicitly disclose the method of claim 1,

wherein each subject is a metadata object selected from the group consisting of

a MetaAttribute, a MetaAssociation, a MetaAssociationEnd, a MetaClass and a

MetaCollection. However, *Mikhailov* discloses a group of types of metadata

associated with the corresponding database table **(See col. 5 lines 39-54, col.**

14 lines 62-64, and col. 1 lines 1-31.)

At the time of the invention, it would have been obvious to a person of

ordinary skill in the art of data object models to allow users of the application and

system of *Drake* and *Rasmussen* to utilize the group of types of metadata

associated by *Mikhailov* **(See col. 5 lines 39-54, col. 14 lines 62-64, and col. 1**

lines 1-31.). The motivation would have been to provide multiple users access

to the validation application of Drake **(See *Ramussen* col. 3 lines 37-41)** with

the convenience of structured online communication as taught by *Mikhailov* **(See**

col. 1 lines 27-31).

17.   **Per claim 4**, the rejection of claim 1 is incorporated. Furthermore, *Drake*

and *Rasmussen* do not explicitly disclose the method of claim 1, wherein

identifying includes receiving an indication from a configuration management

module, said indication identifying the first subject. However, *Mikhailov* discloses

automation forms handling application service **(See col. 5 lines 19-38.)**.

At the time of the invention, it would have been obvious to a person of

ordinary skill in the art of data object models to allow users of the application and

system of *Drake* and *Rasmussen* to utilize the group of types of metadata

associated by *Mikhailov* **(See col. 5 lines 39-54, col. 14 lines 62-64, and col. 1**

lines 1-31.). The motivation would have been to provide multiple users access

to the validation application of Drake **(See *Ramussen* col. 3 lines 37-41)** with

the convenience of structured online communication as taught by *Mikhailov* **(See**

col. 1 lines 27-31).

18.   **Per claim(s) 18 and 20**, rejection of claims 2, 17, and 19 are fully

incorporated. Claims 18 and 20 are rejected under the same rationale as claim 2

due to the similarity in scope in the limitations of the claims. **(See respective**

claims above.).

19.   **Per claim(s) 21**, rejection of claims 3, 4, and 19 are fully incorporated.

Claim 21 is rejected under the same rationale as claims 3 and 4 due to the

similarity in scope in the limitations of the claims. **(See respective claims**

above.).

20.   Claims 7-13, 16, and 22-24 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Drake et al. (US Pub. No. 2003/0070142 A1), hereinafter

Drake, in view of Rasmussen (USPN 7,185,016 B1), hereinafter *Rasmussen*, in

view of Sang-Kyun et al. ("Immediate and Partial Validation Mechanism for the

Conflict Resolution of Update Operations in XML Databases." 2002), hereinafter

Sang, and in further view of Lindberg et al. (US Pub. No. 2003/0028540 A1),

hereinafter *Lindberg*.

21.   **Per claim 7**, the rejection of claim 1 is incorporated. Furthermore, *Drake*

as modified by *Rasmussen* does not explicitly disclose the method of claim 1,

wherein the first subject is a root object for a collection of associated objects.

However, *Lindberg* discloses a first subject as a root object for a collection of

associated objects **(See Fig. 2 shows "Person" as the root. Also see**

paragraph [0016]).

        At the time of the invention, it would have been obvious to a person of

ordinary skill in the art of data object models to allow users of the application and

system of *Drake* and *Rasmussen* where social security number is the subject to

utilize the method of associating objects as taught by *Lindberg* **(See Fig. 2.)**,

whereby the person could be associated with other objects by its social security

number attribute. The motivation would have been to provide a more useful way

of organizing and labeling the data without changing the information model layer

(*Lindberg* paragraph [0016]) and thereby allowing for easily and efficiently

sharing the data and data validation among multiple presentations **(*Drake*

paragraph [0022])**.

22.   **Per claims 8**, the rejection of claim 7 is incorporated. *Drake, Rasmussen,*

and *Lindberg* discloses wherein the collection of objects is a deployable

collection including all objects transitively associated with the root object **(See**

paragraph [0021] of *Drake.)* and (See Fig. 2 of *Lindberg*).

23.   **Per claim 9**, the rejection of claim 7 is incorporated. *Drake in view of*

Rasmussen and *Lindberg* discloses wherein the collection of objects is an

aggregated collection including the root object and all of its strongly aggregated

child objects recursively **(See Fig. 2 of *Lindberg*)**.

24.   **Per claim 10**, the rejection of claims 1 and 7 are incorporated, wherein

determining a context includes:

        a) traversing all associations with a root object to identify target objects

(See Fig. 2 of *Lindberg*);

        b) repeating a) for each target object, with each target object as the root

object **(See Fig. 2 of *Lindberg*)**; and

c) generating a list of all target objects, wherein said list of objects represents a

transitive closure based on the root object **(See paragraph [0021] of *Drake* and**

See Fig. 2 of *Lindberg*).

25.   **Per claim 11,** *Drake in view of Rasmussen* and *Lindberg* discloses the

method of claim 10, wherein determining a context is implemented using queries written in the Java language or a meta-language (METALANG) or both **(See Java taught in paragraph [0035] of *Drake.*)**.

26.   **Per claim 12**, *Drake in view of Rasmussen* and *Lindberg* discloses the method of claim 10, wherein the list of objects forms the context for validation **(See Fig. 2 of *Lindberg* and paragraph [0016])**.

27.   **Per claims 13 and 22**, rejection of claims 7, 10, and 19 are fully incorporated. Claims 13 and 22 are rejected under the same rationale as claim 7 due to the similarity in scope in the limitations of the claims. **(See respective claims above.)**

28.   **Per claim 16**, the rejection of claims 1 and 7 are incorporated. Further, *Drake in view of Rasmussen* and *Lindberg* discloses the method of claim 1, wherein each subject in the context is one of an instance of an object, an instance of an object containing an attribute, an instance of an object having an association and an instance of root object of a deployable unit of a collection of objects **(See rejection of claims 1 and 7 above)**.

29.   **Per claim 23**, rejection of claims 8, 9, and 22 are fully incorporated.

Claim 23 is rejected under the same rationale as claims 8 and 9 due to the

similarity in scope in the limitations of the claims. **(See respective claims**

above.)

30.   **Per claim 24**, rejection of claims 10 and 22 are fully incorporated.

Claim 24 is rejected under the same rationale as claims 10 due to the similarity in

scope in the limitations of the claims. **(See respective claims above.)**

Response to Arguments

31.   Applicant's arguments with respect to claim 1 have been considered but

are moot in view of the new ground(s) of rejection.   Applicant argues the

references to do not teach or suggest each element of the claim. Particularly,

Applicant argues the amended portion of claim 1 which is moot in view of the

new ground of rejection as seen above. Specifically, Sang teaches partial and

complete validation as seen in pages 387, and 393-394. Applicant also, argues

limitations not stated in the claims. Examiner's rejection meets the breadth of the

claim language.

         With regards to claims 2, Applicant argues the teaching of the cited

references would not render obvious the use of objects such as

MetaAssociationEnd. Examiner respectfully disagrees. Mikhailov discloses

'metadata associated' with the corresponding database table as seen in col. 5

lines 39-54. Therefore, the reference clearly teaches the limitation, therefore, the

Applicant's argument is not persuasive toward patentability. Accordingly, claims

3-26 are not patentably distinguishable from the prior art and the claims are not

in condition for allowance.

Conclusion

32.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Minsky et al. (USPN 2005/0038764 A1).

33.   Applicant's amendment necessitated the new ground(s) of rejection

presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**.

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as

set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire

THREE MONTHS from the mailing date of this action. In the event a first reply is

filed within TWO MONTHS of the mailing date of this final action and the advisory

action is not mailed until after the end of the THREE-MONTH shortened statutory

period, then the shortened statutory period will expire on the date the advisory

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

34.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Carlene Gordon whose telephone number is

(571) 272-1951. The examiner can normally be reached on Mon-Fri, varying

times between 5:30am - 10:00pm EST.

       If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Christian Chace can be reached on (571) 272-4190. The

fax phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

35.   Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

for published applications may be obtained from either Private PAIR or Public

PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free). If you would like assistance from a USPTO Customer Service

Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.

/C. G./

/Carlene Gordon/
Patent Examiner
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/Christian P. Chace/
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